

Matrix C1 Series Ethernet Switches (C1G124-24 and C1H124-48) Installation Guide





ELECTRICAL HAZARD: Only qualified personnel should perform installation procedures.

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SAFETY COMPLIANCE

Warning: Fiber-optic Port Safety



When using a fiber-optic media expansion module, never look at the transmit laser while it is powered on. Also, never look directly at the fiber TX port and fiber cable ends when they are powered on.

Avertissement: Ports pour fibres optiques - sécurité sur le plan optique



Ne regardez jamais le laser tant qu'il est sous tension. Ne regardez jamais directement le port TX (Transmission) à fibres optiques et les embouts de câbles à fibres optiques tant qu'ils sont sous tension.

Warnhinweis: Faseroptikanschlüsse - Optische Sicherheit



Niemals ein Übertragungslaser betrachten, während dieses eingeschaltet ist. Niemals direkt auf den Faser-TX-Anschluß und auf die Faserkabelenden schauen, während diese eingeschaltet sind.

Underwriters Laboratories Inc. (USA)

Important! Before making connections, make sure you have the correct Cord Set. Check it (read the label on the cable) against the following specification list.

Operating Voltage	Cord Set Specifications
120 Volts	UL Listed/CSA Certified Cord Set
	Minimum 18 AWG
	Type SVT or SJT three conductor cord
	Maximum length of 15 feet
	Parallel blade, grounding type attachment plug rated 15A, 125V
240 Volts (Europe only)	Cord Set with H05VV-F cord having three conductors with minimum diameter of 0.75 mm ²
	IEC-320 receptacle
	Male plug rated 10A, 250V

Wichtige Sicherheitshinweise (Germany)

1. Bitte lesen Sie diese Hinweise sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie keine Flüssigoder Aerosolreiniger. Am besten eignet sich ein angefeuchtetes Tuch zur Reinigung.
4. Die Netzanschußsteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Beschädigungen hervorrufen.
7. Die Belüftungsöffnungen dienen der Luftzirkulation, die das Gerät vor Überhitzung schützt. Sorgen Sie dafür, daß diese Öffnungen nicht abgedeckt werden.
8. Beachten Sie beim Anschluß an das Stromnetz die Anschlußwerte.
9. Verlegen Sie die Netzanschlußleitung so, daß niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
10. Alle Hinweise und Warnungen, die sich am Gerät befinden, sind zu beachten.
11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
12. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.
13. Öffnen sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von autorisiertem Servicepersonal geöffnet werden.
14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
 - a. Netzkabel oder Netzstecker sind beschädigt.
 - b. Flüssigkeit ist in das Gerät eingedrungen.
 - c. Das Gerät war Feuchtigkeit ausgesetzt.
 - d. Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
 - e. Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
 - f. Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
15. Zum Netzanschluß dieses Gerätes ist eine geprüfte Leitung zu verwenden. Für einen Nennstrom bis 6A und einem Gerätegewicht größer 3kg ist eine Leitung nicht leichter als H05VV-F, 3G, 0.75mm² einzusetzen.
Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70dB(A) oder weniger.

SAFETY INFORMATION

CLASS 1 LASER TRANSCEIVERS

LASER RADIATION AND CONNECTORS

When the connector is in place, all laser radiation remains within the fiber. The maximum amount of radiant power exiting the fiber (under normal conditions) is -12.6 dBm or 55×10^{-6} watts.

Removing the optical connector from the transceiver allows laser radiation to emit directly from the optical port. The maximum radiance from the optical port (under worst case conditions) is 0.8 W cm^{-2} or $8 \times 10^3 \text{ W m}^{-2} \text{ sr}^{-1}$.

Do not use optical instruments to view the laser output. The use of optical instruments to view laser output increases eye hazard. When viewing the output optical port, power must be removed from the network adapter.

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Application of Council Directive(s): **89/336/EEC**
73/23/EEC

Manufacturer's Name: **Enterasys Networks, Inc.**

Manufacturer's Address: **50 Minuteman Road**
Andover, MA 01810
USA

European Representative Address: **Enterasys Networks Ltd.**
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Berkshire RG14 2PZ, England

Conformance to Directive(s)/Product Standards: **EC Directive 89/336/EEC**
EC Directive 73/23/EEC
EN 55022
EN 55024
EN 60950
EN 60825

Equipment Type/Environment: **Networking Equipment, for use in a Commercial**
or Light Industrial Environment.

Enterasys Networks, Inc. declares that the equipment packaged with this notice conforms to the above directives.

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About This Guide

This guide provides information necessary to install and set up the Matrix C1 Series C1H124-48 and C1G124-24 devices and available options.

For information about the Command Line Interface (CLI) set of commands used to configure and manage the C1H124-48 and C1G124-24, refer to the Enterasys Networks™ *Matrix C Series Configuration Guide*.

For information about connecting optional redundant power source, refer to the Enterasys Networks™ *Matrix C Series Redundant Power System Installation Guide*.



NOTE: In this guide, the following terms are used:

- *Device*, unless noted differently, refers to both the C1H124-48 and C1G124-24.
- *Mini-GBIC* (Mini-Gigabit Interface Card) refers to an optional small form interface module that plugs into the fixed front panel Mini-GBIC slots.

Important Notice

Depending on the firmware version used in the C1H124-48 and C1G124-24, some features described in this document may not be supported. Refer to the Release Notes shipped with the device to determine which features are supported.

WHO SHOULD USE THIS GUIDE



ELECTRICAL HAZARD: Only qualified personnel should perform the installation procedures in this guide.

This guide is intended for a network administrator responsible for installing and setting up the device.

STRUCTURE OF THIS GUIDE

This guide is organized as follows:

This preface provides preliminary information to help you use this guide and a brief summary of each chapter, defines conventions used in this document, and lists technology and user guides that may help you set up and manage the C1H124-48 and C1G124-24 and available options.

Chapter 1, **Introduction**, provides an overview of the device and explains how to contact Enterasys Networks for technical support.

Chapter 2, **Network Requirements**, outlines the network requirements that must be met before installing the device.

Chapter 3, **Hardware Installation**, provides instructions on how to install the device on a table top or into a standard 19-inch rack, and connect network segments to the device and any installed option.

Chapter 4, **Troubleshooting**, describes the function of the status LEDs, which can help to quickly diagnose network/operational problems.

Appendix A, **Specifications**, contains information on port operating specifications, connector pinouts, environmental requirements, and physical properties of the C1H124-48 and C1G124-24, and the optional Mini-Gigabit Interface Cards (Mini-GBIC) and the media they support.

HOW TO USE THIS GUIDE

For...	Refer to...
An overview of the C1H124-48 and C1G124-24 features and how to obtain technical support	Chapter 1, Introduction
Network requirements that must be met before installing the device	Chapter 2, Network Requirements
Instructions to install the device hardware	Chapter 3, Hardware Installation
Troubleshooting installation problems and diagnosing network/operational problems using the LANVIEW LEDs	Chapter 4, Troubleshooting
Specifications, environmental requirements, and physical properties of the C1H124-48 and C1G124-24, and optional modules	Appendix A, Specifications

RELATED DOCUMENTS

The following documents can help you to set up and manage the C1H124-48 and C1G124-24:

Matrix C Series Redundant Power System Installation Guide

Matrix C Series Configuration Guide

Cabling Guide

The manuals listed above can be obtained from the World Wide Web in Adobe Acrobat Portable Document Format (PDF) at the following site:

<http://www.enterasys.com/support/manuals>

Unlike the Matrix C Series guides, the *Cabling Guide* is not listed alphabetically on the web site. Instead, it is listed under the *Overview Guides* link.

DOCUMENT CONVENTIONS

This guide uses the following conventions:



NOTE: Calls the reader's attention to any item of information that may be of special importance.



TIP: Conveys helpful hints concerning procedures or actions.



CAUTION: Contains information essential to avoid damage to the equipment.



ELECTRICAL HAZARD: Warns against an action that could result in personal injury or death due to an electrical hazard.



WARNING: Warns against an action that could result in personal injury or death.

Introduction

This chapter introduces the C1H124-48 and C1G124-24 standalone Ethernet switch devices.

Important Notice

Depending on the firmware version used in the device, some features described in this document may not be supported. Refer to the Release Notes shipped with the device to determine which features are supported.

1.1 OVERVIEW

The following provides an overview of the C1H124-48 and C1G124-24.

C1H124-48

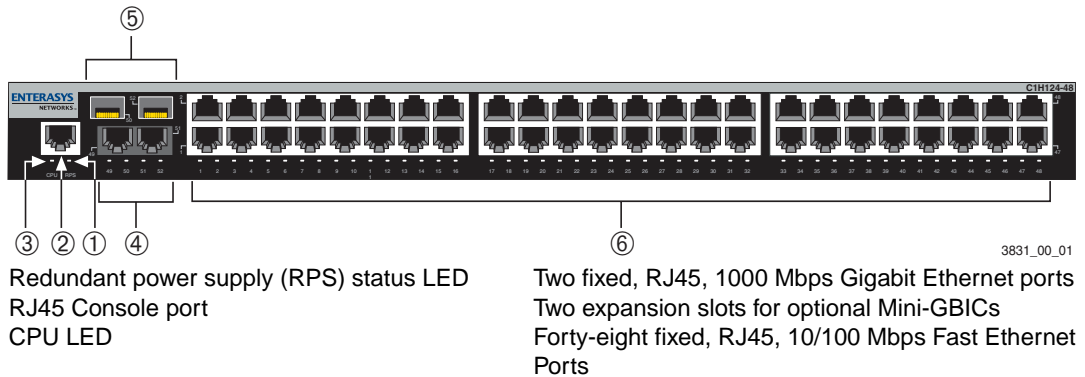
The C1H124-48 (Figure 1-1) has several types of port connections, which include

- forty-eight front panel RJ45 ports (10BASE-T/100BASE-TX compliant),
- two front panel RJ45 ports (1000BASE-T compliant), and
- two expansion slots for optional Mini-GBIC interface modules.

The 10/100 Mbps fixed front panel ports can operate in either half-duplex or full-duplex mode, as determined by Auto-Negotiation.

A single LED is provided for each port to indicate link status and activity. The LED is lit when there is a link, and flashes when there is traffic.

Figure 1-1 C1H124-48 Standalone Device



C1G124-24

The C1G124-24 (Figure 1-2) has several types of port connections, which include

- twenty-four front panel RJ45 ports (10BASE-T/100BASE-TX/1000BASE-T compliant), and
- four expansion slots for optional Mini-GBIC interface modules.

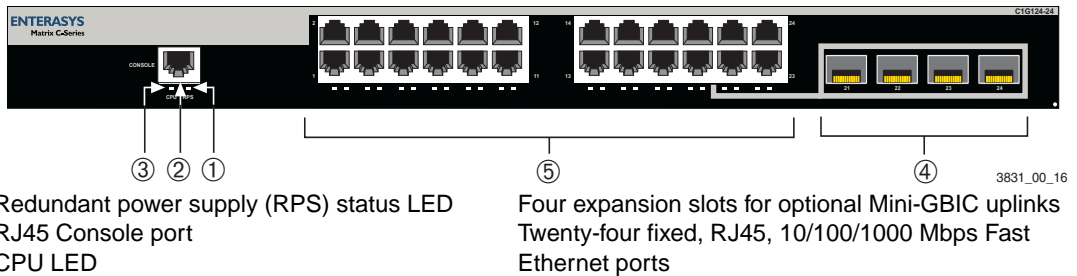
The 10/100/1000 Mbps fixed front panel ports can operate in either half-duplex or full-duplex mode, as determined by Auto-Negotiation.

On the C1G124-24, there are four additional slots labeled 21 through 24 for 1-Gbps fiber-optic connections via optional Mini-GBICs. However, the C1G124-24 can only support 24 slots. Using any or all of the four additional Mini-GBIC slots (21 through 24) automatically disables the same number of fixed RJ45 ports on a first-come, first-served basis during the system initialization process.

For example, connections made to Mini-GBICs in Mini-GBIC slot 21 and 23 before initializing the system, disables the fixed RJ45 ports 21 and 23. However, if connections are made after initialization, the Mini-GBIC connections are ignored and the fixed RJ45 ports 21 and 23 remain enabled.

The 10/100/1000 Mbps fixed front panel ports can operate in either half-duplex or full-duplex mode, as determined by Auto-Negotiation.

A single LED is provided for each port to indicate link status and activity. The LED is lit when there is a link, and flashes when there is traffic.

Figure 1-2 C1G124-24 Standalone Device

C1H124-48 and C1G124-24

The switch functions can be configured using the WebView™ application, CLI switching commands, or SNMP.

Each device can be installed as a tabletop unit or installed into a standard 19-inch rack using the mounting hardware supplied with the rack.

The devices have power supply redundancy capability when connected to an optional external supply. If the resident power supply fails, the external power supply assumes the entire load of the device without interruption to network traffic. Each power supply supports its own ac input connection, which enables each power supply to be connected to a different ac power circuit for power source redundancy.

1.1.1 Mini-Gigabit Interface Connectors (Mini-GBICs)

The Mini-GBIC installs into a slot to provide 1000BASE-SX or LX network connections. There are different Mini-GBICs that can provide various types of connectors, such as an MT-RJ connector, LC connector that supports single-mode fiber-optic cabling, or LC connector that supports single or multimode fiber-optic cabling. Refer to [Table A-2](#) for a list of supported Mini-GBICs.

1.2 HALF-DUPLEX/FULL-DUPLEX AUTO-NEGOTIATION

The devices can auto-negotiate the ports' mode of operation (half-duplex or full-duplex) between two devices according to IEEE 802.3 standards. During Auto-Negotiation, two devices automatically exchange information about their current operating mode. The Auto-Negotiation feature targets the maximum capability that can be reached between the two devices. For example, the devices can adjust to full-duplex operation when the device on the other end of the connection can also adjust from half-duplex to full-duplex. If the device on the other end of the connection can only operate in half-duplex mode, then the devices adjust to operate in half-duplex mode.

1.3 PORT TRUNKING

Port Trunking is used for load balancing or load sharing. Port Trunking provides a mechanism to group, or aggregate, multiple links of any technology together to scale the backbone bandwidth beyond the limitations of a single link. All links are user-configurable so administrators can scale the backbone bandwidth by adding Port Trunking. The benefits of Port Trunking include the following:

- All purchased bandwidth is used.
- Distributed, resilient links increase reliability and performance.
- Multiple technologies are supported within a single trunk for maximum flexibility.

1.4 REMOTE MONITORING (RMON)

The devices support the 1, 2, 3, and 4 Ethernet RMON groups. The Statistics, Alarms, Events, and History groups are enabled on all ports by default.

1.5 PORT REDIRECT FUNCTION

The port redirect function, also referred to as “Port Mirroring,” is a troubleshooting tool used to map traffic from multiple source ports to a single destination port within the module. This feature allows frames, including those with errors, to be copied and sent to an analyzer or RMON probe. The analyzer or RMON probe will see the data as if it were directly connected to the LAN segment of the source port.

1.6 FLOW CONTROL

Flow control is a method of managing the flow of frames between two devices. It ensures that a transmitting device does not overwhelm a receiving device with data. This is accomplished by the transmitting device pausing its transmission while the receiving device processes the frames already received.

The devices support frame-based 802.3x flow control. Frame-based 802.3x flow control is supported on all Ethernet ports operating in the full-duplex mode. Flow control can be enabled or disabled on a port-by-port basis.

Back pressure flow control is not supported on ports operating in the half-duplex mode.

1.7 802.1p PORT PRIORITY

The 802.1p port priority is used to assign a default priority to the frames received without priority information in their tag header, map prioritized frames to the appropriate transmit queues, and prioritize frames according to protocol type. The 802.1p port priority is part of the IEEE 802.1D standard.

1.8 MANAGEMENT

Management of the module can be either in-band or out-of-band. In-band remote management is possible through any SNMP-compliant Network Management Software, such as the Enterasys Networks' NetSight™ management product. In-band management using Telnet and Enterasys Networks' Webview™ is also provided. Out-of-band Local Management is provided through the RJ45 COM port on the front panel using a VT100 terminal or a VT100 terminal emulator.

Local Management provides the ability to manage the devices. Refer to the *Matrix C Series Configuration Guide* for more information.

1.9 SWITCHING OPTIONS

The devices provide 802.1Q switching between all of the front panel interfaces. In the 802.1Q mode (the default mode of operation), the device functions as an 802.1D switch until you configure VLANs. Up to 4094 VLANs can be configured. When VLANs are configured, the backplane ports are automatically configured as Q-trunk ports.

IEEE 802.1Q switching allows migration to Virtual Network technologies without requiring the replacement of existing equipment.

1.10 STANDARDS COMPATIBILITY

The C1H124-48 and C1G124-24 devices are fully compliant with the IEEE 802.3, 802.3u, 802.3x, 802.1D, and 802.1Q standards. The devices provide IEEE 802.1D Spanning Tree Algorithm (STA) support to enhance the overall reliability of the network and protect against “loop” conditions. The devices support a wide variety of industry standard MIBs including RFC 1213 (MIB II), RFC 1757 (RMON), and RFC 1493 (Bridge MIB). A full suite of Enterasys Networks Enterprise MIBs provide a wide array of statistical information to enhance troubleshooting. For information on how to extract and compile individual MIBs, contact Enterasys Networks. Refer to the Release Notes for a complete list of supported MIBs.

1.11 UPN SUPPORT

User Personalized Networks (UPN) is an architecture that allows network administrators to map network services to identified users, machines, peripherals and other network entities. UPN consists of three tiers:

- Classification rules make up the first or bottom tier. The rules apply to devices in the UPN environment, such as switches and routers. The rules are designed to be implemented at or near the user's point of entry to the network. The rules are typically at Layer 2, 3, or 4 of the OSI network model.
- The middle tier is Services, which allows multiple classification rules to be aggregated. Services can include e-mail and Internet access.
- Roles, or Behavioral Profiles make up the top tier. The roles assign services to various business functions or departments, such as executive, sales, and engineering.

To implement most roles, UPN requires authentication such as 802.1x using EAP-TLS, EAP-TTLS, or EAP-PEAP. Authorization information, attached to the authentication response, determines the application of the UPN policy. One way to communicate the authorization information is to include the Policy Name in a RADIUS Filter-ID attribute. A UPN administrator can also define a role to be implemented in the absence of an authentication and authorization.

Refer to the release notes shipped with the module for details.

The rules can only be implemented on the Matrix system by the Enterasys NetSight Policy Manager, which is described on the web site at www.enterasys.com/netsight.

1.12 GETTING HELP

For additional support related to the devices or this document, contact Enterasys Networks using one of the following methods:

World Wide Web	http://www.enterasys.com
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Phone	603-332-9400 1-800-872-8440 (toll-free in U.S. and Canada)
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For the Enterasys Networks Support toll-free number in your country:
<http://www.enterasys.com/support/gtac-all.html>

Internet mail	support@enterasys.com
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To send comments or suggestions concerning this document to the Technical Writing Department: **TechWriting@enterasys.com**

Make sure to include the document Part Number in the email message.

Before contacting Enterasys Networks for technical support, have the following information ready:

- Your Enterasys Networks service contract number
- A description of the failure
- A description of any action(s) already taken to resolve the problem (e.g., changing mode switches, rebooting the unit, etc.)
- The serial and revision numbers of all involved Enterasys Networks products in the network
- A description of your network environment (layout, cable type, etc.)
- Network load and frame size at the time of trouble (if known)
- The device history (i.e., have you returned the device before, is this a recurring problem, etc.)
- Any previous Return Material Authorization (RMA) numbers

Network Requirements

Before installing the C1H124-48 and C1G124-24, review the requirements and specifications referred to the following sections:

- 10BASE-T Twisted-Pair Network ([Section 2.1](#))
- 100BASE-TX Twisted-Pair Network ([Section 2.2](#))
- 1000BASE-FX Single-Mode and Multimode Fiber-Optic Networks ([Section 2.3](#))
- 1000BASE-T Twisted-Pair Network ([Section 2.4](#))



CAUTION: The network installation must meet the requirements to ensure satisfactory performance of this equipment. Failure to do so will produce poor network performance.



NOTE: The *Matrix C Series Configuration Guide* and *Cabling Guide* referred to in the following sections can be obtained from the Enterasys Networks World Wide Web site: <http://www.enterasys.com/>

2.1 10BASE-T TWISTED-PAIR NETWORK

When connecting a 10BASE-T segment to one of the RJ45 fixed ports (1 through 48), or to an optional Ethernet expansion module, ensure that the network meets the Ethernet network requirements of the IEEE 802.3-2002 standard for 10BASE-T. Refer to the *Cabling Guide* for details.



NOTE: If a port is to operate at 100 or 1000 Mbps, Category 5 cabling must be used. Category 3 cabling does not meet the 100 or 1000 Mbps specifications. For 10 Mbps operation only, Category 3, Category 4, or Category 5 cabling can be used. Refer to [Section 2.2](#) and [Section 2.4](#) for information about 100BASE-TX and 1000BASE-T networks and cabling.

2.2 100BASE-TX TWISTED-PAIR NETWORK

When connecting a 100BASE-TX segment to one of the fixed ports (1 through 48), or to an optional Ethernet expansion module, use Category 5 UTP cabling. The device at the other end of the twisted pair segment must meet IEEE 802.3-2002 100BASE-TX Fast Ethernet network requirements for the devices to operate at 100 Mbps.



NOTE: The fixed ports of the device support Category 5 UTP cabling with an impedance between 85 and 111 ohms for 100 Mbps operation.

The device is capable of operating at either 10 or 100 Mbps. The device automatically senses the speed of the other device and adjusts its speed accordingly when Auto-Negotiation is enabled.

2.3 1000BASE-FX SINGLE-MODE AND MULTIMODE FIBER-OPTIC NETWORK

Mini-GBIC port sockets (50 and 52 on C1H124-48, or 21 through 24 on C1G124-24) enable you to vary the type of 1-Gbps port connection. At the printing of this document there were three Mini-GBICs available that support one of the following:

- 1000BASE-SX compliant LC fiber-optic multimode port connection
- 1000BASE-LX compliant LC fiber-optic single-mode port connection
- 1000BASE-SX compliant MT-RJ fiber-optic multimode port connection

The device at the other end of the fiber-optic connection must meet the same 1-Gigabit Ethernet requirements for the connected devices to operate at Gigabit speed.

2.4 1000BASE-T TWISTED-PAIR NETWORK

When connecting a 1000BASE-T segment to one of the RJ45 fixed ports (49 and 51) or to an optional Ethernet expansion module that supports 1000BASE-T, use Category 5 UTP cabling. The device at the other end of the twisted pair segment must meet IEEE 802.3-2002 1000BASE-T Gigabit Ethernet network requirements for the devices to operate at 1000 Mbps.

Hardware Installation



ELECTRICAL HAZARD: Only qualified personnel should install the C1H124-48 and C1G124-24.



NOTE: Read the Release Notes shipped with the C1H124-48 and C1G124-24 to check for any exceptions to the supported features and operation documented in this guide.

This chapter provides the instructions required to install the device. Follow the order of the sections as listed below to correctly install the device.

- Unpacking the device ([Section 3.2](#))
- Installing options ([Section 3.3](#))
- Installing the device (on a shelf or tabletop, or into a standard rack) ([Section 3.4](#))
- Connecting to the network ([Section 3.5](#))
- Connecting to console port for local management ([Section 3.6](#))
- Completing the installation ([Section 3.7](#))

3.1 REQUIRED TOOLS

A Phillips screwdriver is required to install the device into a rack.

3.2 UNPACKING THE DEVICE

Unpack the device as follows:

1. Open the box and remove the packing material protecting the device.
2. Verify the contents of the carton as listed in [Table 3-1](#).

Table 3-1 Contents of Shipping Carton

Item	Quantity
C1H124-48 or C1G124-24	1
Antistatic Wrist Strap	1
Console Cable Kit	1
Rackmount Kit	1
Manual Accessory Kit	1
Power Cord	1
RJ45-to-DB9 female adapter	1

3. Remove the tape seal on the non-conductive bag to remove the device.
4. Perform a visual inspection of the device for any signs of physical damage. Contact Enterasys Networks if there are any signs of damage. Refer to [Section 1.12](#) for details.

3.3 INSTALLING OPTIONAL MINI-GBICs

This section describes how to install a Mini-GBIC into the front panel Mini-GBIC slots of either the C1H124-48 or C1G124-24.



WARNING: Mini-GBICs use Class 1 lasers. Do not use optical instruments to view the laser output. The use of optical instruments to view laser output increases eye hazard. When viewing the output optical port, power must be removed from the network adapter.



CAUTION: Carefully follow the instructions in this manual to avoid damaging the Mini-GBIC and the host device (C1H124-48 or C1G124-24).

The Mini-GBIC and host device are sensitive to static discharges. Use an antistatic wrist strap and observe all static precautions during this procedure. Failure to do so could result in damaging the Mini-GBIC or host device. Always leave the Mini-GBIC in the antistatic bag or an equivalent antistatic container when not installed.

To prepare and install a Mini-GBIC, proceed as follows:

Preparation

Before installing the Mini-GBIC, proceed as follows:

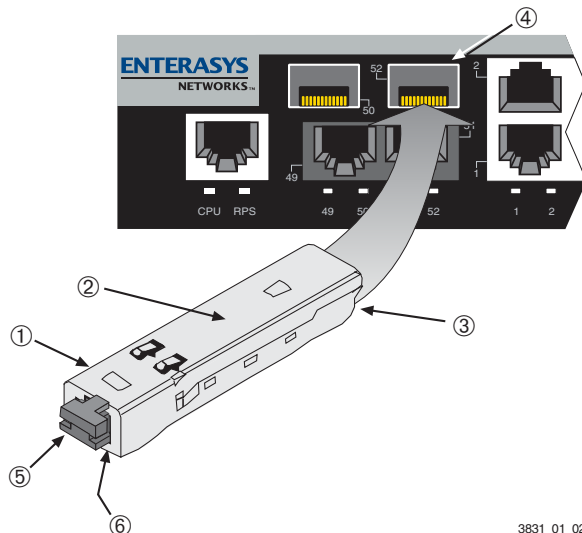
1. Attach the antistatic wrist strap (refer to the instructions in the antistatic wrist strap package) before removing the Mini-GBIC from the antistatic packaging.
2. Remove the Mini-GBIC from the packaging.
3. If there is a protective dust cover (see [Figure 3-1](#),) on the Mini-GBIC port, do not remove it at this time.

Installation

To install a Mini-GBIC, refer to [Figure 3-1](#) or [Figure 3-2](#), and proceed as follows:

1. Hold the Mini-GBIC with its top side facing up and its 7-pin edge connector facing the port slot .
2. Carefully align the Mini-GBIC with the port slot .
3. Push the Mini-GBIC into the port slot until the Mini-GBIC “clicks” and locks into place.

Figure 3-1 Mini-GBIC with MT-RJ Connector (C1H124-48 shown)

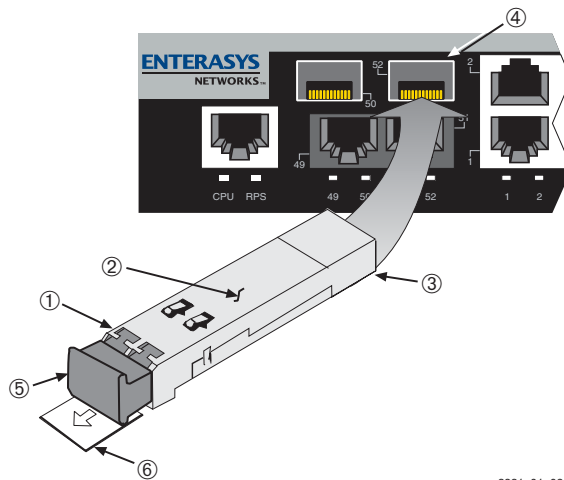


3831_01_02

Mini-GBIC (MGBIC-MT01)
 Mini-GBIC, top side
 7-Pin edge connector (insertion side)

Port slot
 Mini-GBIC, protective dust cover
 Release tab

Figure 3-2 Mini-GBIC with LC Connector (C1H124-48 shown)



3831_01_02A

Mini-GBIC (MGBIC-LC01 and MGBIC-LC09)
Mini-GBIC, top side
7-Pin edge connector (insertion side)

Port slot
Mini-GBIC, protective dust cover
Release tab

Removing the Mini-GBIC



CAUTION: Carefully follow the instructions in this manual to avoid damaging the Mini-GBIC and the host device (C1H124-48 or C1G124-24).

The Mini-GBIC and host device are sensitive to static discharges. Use an antistatic wrist strap and observe all static precautions during this procedure. Failure to do so could result in damaging the Mini-GBIC or host device. Always leave the Mini-GBIC in the antistatic bag or an equivalent antistatic container when not installed.

To remove a Mini-GBIC from the C1H124-48 port slot, proceed as follows:

1. Attach the antistatic wrist strap (refer to the instructions in the antistatic wrist strap package) before removing the Mini-GBIC.
2. Remove the cables connected to the Mini-GBIC.
3. Locate the release tab under the front end of the Mini-GBIC. For the type of Mini-GBIC shown in Figure 3-1, push in on the release tab as far as it will go to release the Mini-GBIC from the port slot. For the type of Mini-GBIC shown in Figure 3-2, pull out on the release tab to release the Mini-GBIC from the port slot.

4. Grasp the sides of the Mini-GBIC and pull it straight out of the port slot .

If storing or shipping the Mini-GBIC, insert the dust protector into the Mini-GBIC to protect the fiber ports.

3.4 INSTALLING THE DEVICE

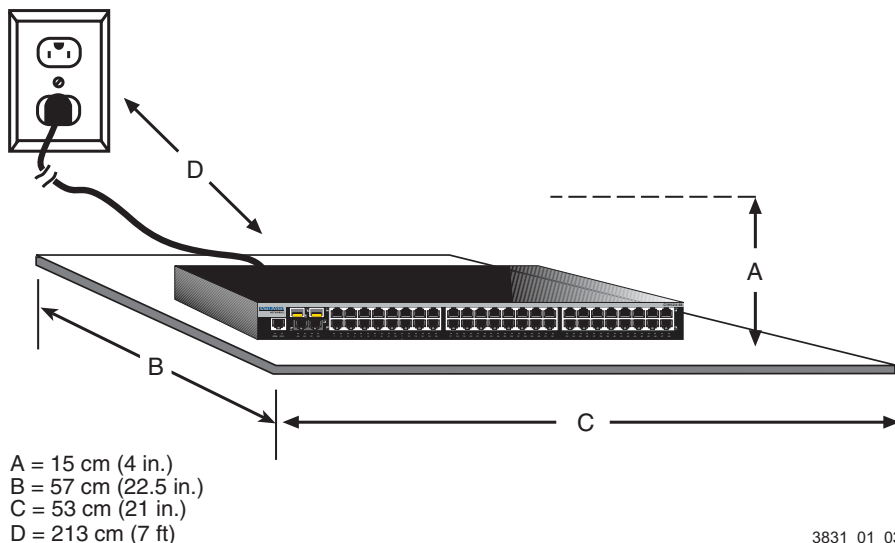
For a tabletop or shelf installation, locate the device within seven feet of its power source and on an unrestricted free surface area as shown in [Figure 3-3](#). If an optional redundant power system is going to be installed and connected to the D-type cable connector on the rear of the device, refer to the installation guide shipped with the redundant power system.

Proceed to [Section 3.4.3](#) for power connection instructions.



CAUTION: To ensure proper ventilation and prevent overheating, leave a minimum clearance space of 5.1 cm (2.0 in.) at the left, right, and rear of the device.

Figure 3-3 Clearance Required for Tabletop or Shelf Installation



3.4.1 Rackmount Installation

To install the device in a 19-inch rack, you need:

- Two rackmount brackets and mounting screws (rackmount kit) shipped with the device.
- Four user-supplied screws to attach the device to a standard 19-inch rack.

3.4.1.1 Guidelines for Rackmount Installation

The installation site must be within reach of the network cabling and meet the requirements listed below:

- Appropriate grounded power receptacles must be located within seven feet of the location.
- An ambient temperature between 5°C (41°F) and 40°C (104°F) must be maintained at the installation site with fluctuations of less than 10°C (18°F) per hour.



CAUTION: To ensure proper ventilation and prevent overheating, leave a minimum clearance space of 5.1 cm (2.0 in.) at the left, right, and rear of the device.



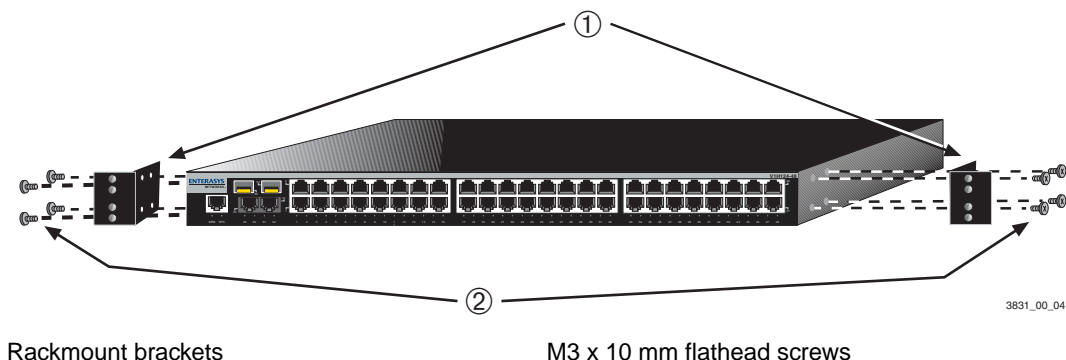
WARNING: Before installing the device into a rack, ensure that the rack can support the device(s) without compromising the stability of the rack. Otherwise, personal injury and/or equipment damage may result.

3.4.2 Rack Mounting the Device

Proceed as follows to install the device into a 19-inch rack:

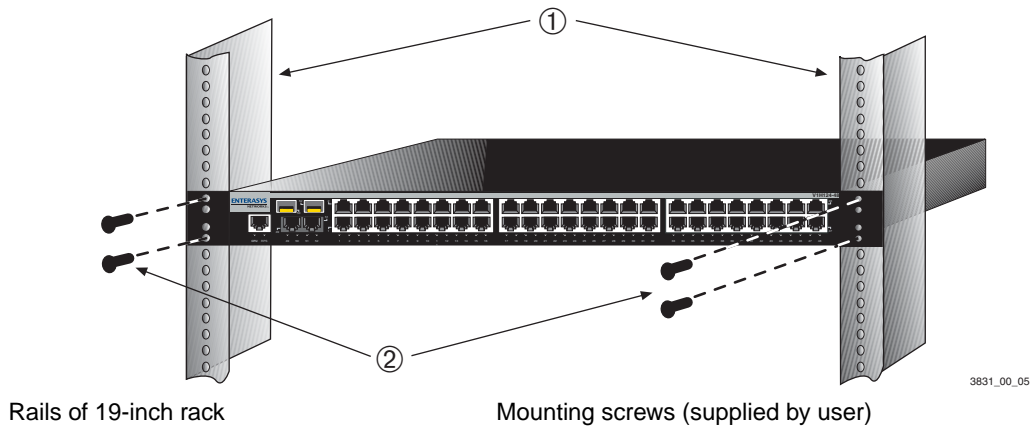
1. Attach the rackmount brackets to the device, as shown in [Figure 3-4](#), using the eight M3 x 10 mm flathead screws in the rackmount kit.

Figure 3-4 Attaching the Rackmount Brackets



2. With the mounting brackets attached, position the device between the vertical frame members of the 19-inch rack as shown in [Figure 3-5](#). Then fasten the device securely to the frame using four mounting screws (user supplied).

Figure 3-5 Fastening the Device to the Rack



3.4.3 Connecting Power

If you experience any problems with this installation, contact Enterasys Networks for assistance.

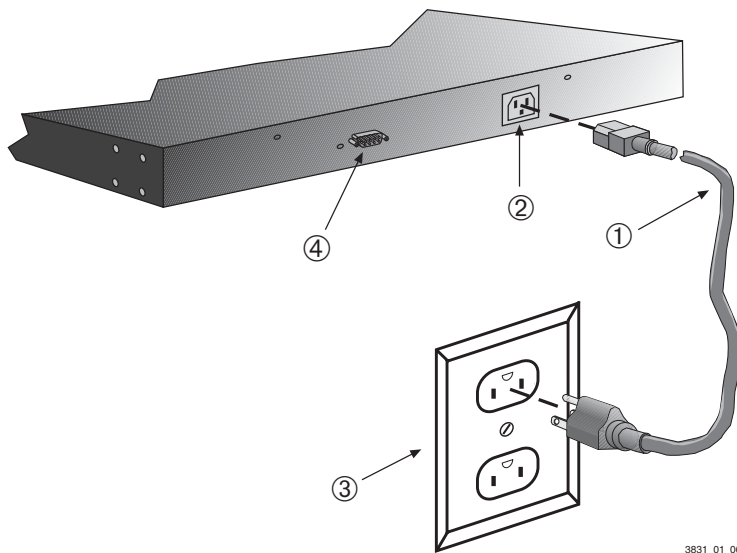


NOTE: The power supply in the device has automatic voltage sensing that allows connection to power sources ranging from 100–125 Vac, 2.5 A or 200–240 Vac, 1.25 A, 50/60 Hz.

To connect the device to the power source, refer to [Figure 3-6](#) and proceed as follows:

1. Plug the power cord into the switch ac power receptacle .
2. Plug the other end of each power cord into a dedicated grounded ac outlet as shown in [Figure 3-6](#).

Figure 3-6 Device, Rear View



AC power cord
AC power receptacle

AC power outlet
D-type connector for external redundant power supply

3. Observe that the power (RPS) LED (not shown), located on the front panel, turns ON (green) and the CPU turns red until the device completes its initialization. It takes under 30 seconds for the device to boot up.



NOTE: If the power-up sequence is interrupted on this device, or if optional hardware has been installed or removed, this device may run an extended diagnostics sequence that may take up to two minutes to complete.

4. If you are installing an optional redundant power system (RPS), refer to the *Matrix C Series Redundant Power System Installation Guide* supplied with the RPS. The RPS chassis is connected to the 15-pin D-type connector using a DC Power/Monitor cable.

3.5 CONNECTING TO THE NETWORK

The following procedures cover the cable connections from the network or other devices to either the C1H124-48 or C1G124-24 any installed optional Mini-GBIC.

- Connecting UTP Cables ([Section 3.5.1](#))
- Connecting Fiber-Optic Cables to Mini-GBICs ([Section 3.5.2](#))

3.5.1 Connecting UTP Cables

The RJ45 fixed front panel ports (1 through 48) of the C1H124-48 are 10BASE-T/100BASE-TX compliant and have internal crossovers. The RJ45 fixed front panel ports (1 through 24) of the C1G124-24 are 10BASE-T/100BASE-TX/1000BASE-T compliant and have internal crossovers. When connecting a workstation to these ports, use a straight-through cable. When connecting networking devices to these ports, such as a bridge, repeater, or router, use a crossover cable.

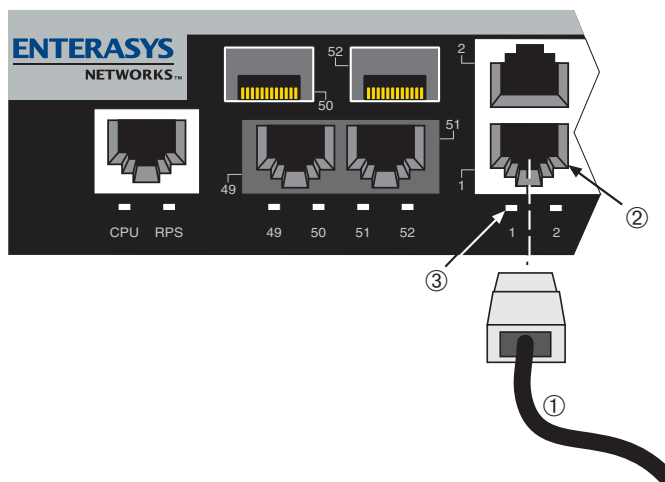


NOTE: All RJ45 front panel ports on the C1H124-48 and C1G124-24 support Category 5 Unshielded Twisted Pair (UTP) cabling with an impedance between 85 and 111 ohms. Category 3 cable may be used if the connection is going to be used only for 10 Mbps.

To connect a twisted pair segment to either the C1H124-48 or C1G124-24, refer to [Figure 3-7](#) and proceed as follows:

1. Ensure that the device connected to the other end of the segment is powered ON.
2. Connect the twisted pair segment to the device by inserting the RJ45 connector on the twisted pair segment into the desired RJ45 port (for example, Port 1).

Figure 3-7 Connecting a Twisted Pair Segment to the Device



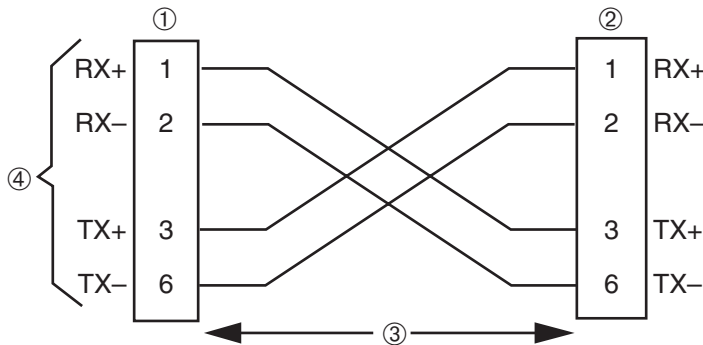
RJ45 connector shown on a C1H124-48
Port 1

Link/Activity LED

3831_01_07

3. Verify that a link exists by checking that the Link/Activity LED is ON (solid green or blinking green). If the Link/Activity LED is OFF, perform the following steps until it is on:
 - a. Verify that the cabling being used is Category 5 or better with an impedance between 85 and 111 ohms with a maximum length of 100 meters (328 feet).
 - b. Verify that the device at the other end of the twisted pair segment is on and properly connected to the segment.
 - c. Verify that the RJ45 connectors on the twisted pair segment have the proper pinouts and check the cable for continuity. Typically, a crossover cable is used between hub devices. A straight-through cable is used to connect between switches or hub devices and an end user (computer). Refer to [Figure 3-8](#) and [Figure 3-9](#) for four-wire RJ45 connections. Refer to [Figure 3-10](#) and [Figure 3-11](#) for eight-wire RJ45 connections.
 - d. Ensure that the twisted pair connection meets the dB loss and cable specifications outlined in the *Cabling Guide*. Refer to “[Related Documents](#)” in **About This Guide** for information on obtaining this document.
 4. If a link is not established, contact Enterasys Networks. Refer to [Section 1.12](#) for details.
- Repeat all steps above until all connections have been made.

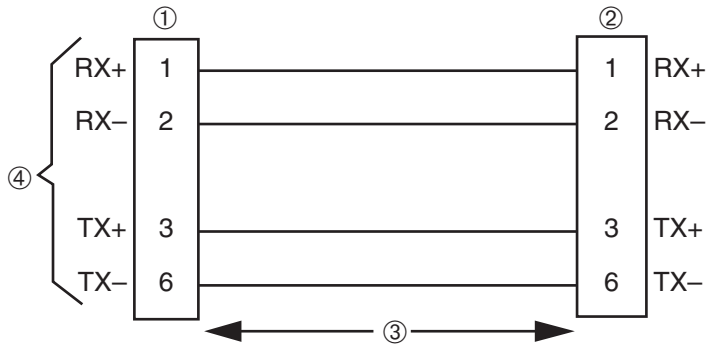
Figure 3-8 Four-Wire Crossover Cable RJ45 Pinouts for 10/100BASE-TX



RJ45 device port
Other device port

RJ45-to-RJ45 crossover cable
RX+/RX- and TX+/TX- connections.
These connections must share a common color pair.

Figure 3-9 Four-Wire Straight-Through Cable RJ45 Pinouts for 10/100BASE-TX

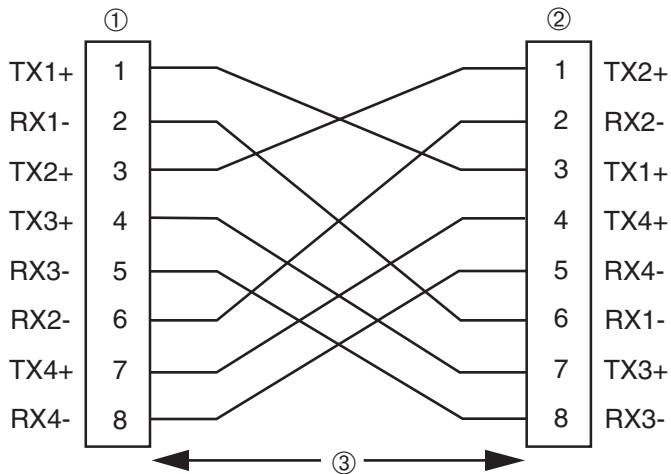


36771_22

RJ45 device port
Other device port

RJ45-to-RJ45 straight-through cable
RX+/RX- and TX+/TX- connections.
These connections must share a common color pair.

Figure 3-10 Eight-Wire Crossover Cable RJ45 Pinouts for 10/100/1000BASE-T

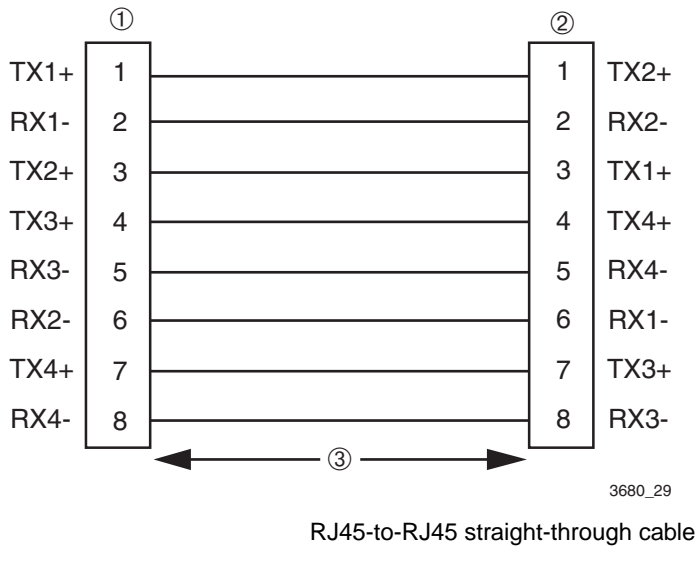


3680_28

RJ45 device port
Other device port

RJ45-to-RJ45 crossover cable

Figure 3-11 Eight-Wire Straight-Through Cable RJ45 Pinouts for 10/100/1000BASE-T



3.5.2 Connecting Fiber-Optic Cables to MT-RJ Ports



WARNING: Mini-GBICs use Class 1 lasers. Do not use optical instruments to view the laser output. The use of optical instruments to view laser output increases eye hazard. When viewing the output optical port, power must be removed from the network adapter.

This section contains the procedures for connecting a 1000BASE-SX multimode fiber-optic segment from the network or other devices to an MT-RJ port connector of a Mini-GBIC (MGBIC-MT01) in front panel port 50 or 52.

Each fiber-optic link consists of two fiber-optic strands within the cable:

- Transmit (TX)
- Receive (RX)

The transmit strand from a device port connects to the receive port of a fiber-optic Fast Ethernet device at the other end of the segment. The receive strand of the applicable MT-RJ port connects to the transmit port of the fiber-optic Fast Ethernet device.

Enterasys Networks recommends labeling fiber-optic cables to indicate receive and transmit ends. Many cables are pre-labeled, providing matching labels or tapes at both ends of each strand of cable.

To connect an MT-RJ cable to a fixed MT-RJ connector of a Mini-GBIC, refer to [Figure 3-12](#) and proceed as follows:

1. Remove the protective covers (not shown) from the front panel MT-RJ fiber-optic port (port 52 in this example) and from the connectors on each end of the cable.



NOTE: Leave the protective covers in place when the connectors are not in use to prevent contamination.



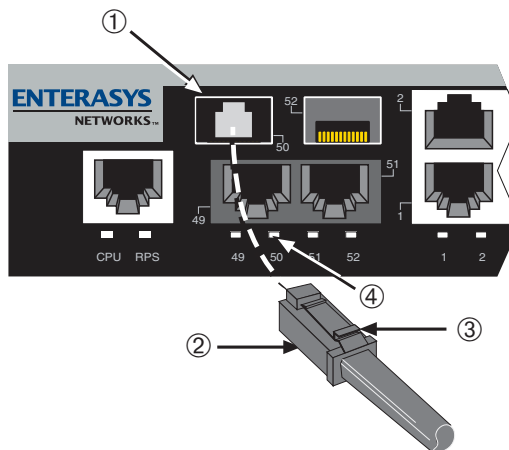
CAUTION: Do not touch the ends of the fiber-optic strands, and do not let the ends come in contact with dust, dirt, or other contaminants. Contamination of cable ends causes problems in data transmissions. If the ends of the fiber-optic strands become contaminated, use a canned duster to blow the surfaces clean. A fiber-port cleaning swab saturated with optical-grade isopropyl alcohol may also be used to clean the ends.

2. Insert the MT-RJ cable connector into the MT-RJ connector until it clicks into place.



NOTE: To remove the MT-RJ cable connector, press on its release tab and pull out the cable connector.

Figure 3-12 Cable Connection to MT-RJ Multimode Fiber-optic Connectors



3831_02_08

Mini-GBIC MT-RJ port connector shown on C1H124-48
MT-RJ cable connector

Release tab
Link/Activity LED

3. Plug the other end of the cable into the appropriate port on the other device. Some cables may be terminated at the other end with two separate connectors, one for each fiber-optic strand. In this case, ensure that the transmit fiber-optic strand is connected to the receive port and the receive fiber-optic strand to the transmit port.
4. Verify that a link exists by checking that the port Link/Activity LED is on (blinking green or solid green). If the Link/Activity LED is off, perform the following steps until it is on:
 - a. Verify that the device at the other end of the segment is ON and connected to the segment.
 - b. If there are separate fiber-optic connections on the other device, check the crossover of the cables. Swap the cable connections if necessary.
 - c. Check that the fiber-optic connection meets the dB loss and cable specifications outlined in the Cabling Guide for multimode cabling. To obtain this document, refer to “[Related Documents](#)” in **About This Guide**.

If a link has not been established, refer to [Chapter 4](#) for LED troubleshooting details. If a problem persists, refer to [Section 1.12](#) for details on contacting Enterasys Networks for support.

5. Repeat steps 1 through 3, above, until all connections have been made.

3.5.3 Connecting Fiber-Optic Cables to LC Ports



WARNING: Mini-GBICs use Class 1 lasers. Do not use optical instruments to view the laser output. The use of optical instruments to view laser output increases eye hazard. When viewing the output optical port, power must be removed from the network adapter.

This section describes how to connect

- a 1000BASE-SX multimode fiber-optic segment from the network or other devices to an LC port connector of a Mini-GBIC (MGBIC-LC01) in front panel port 50 or 52, or
- a 1000BASE-LX single-mode fiber-optic segment from the network or other devices to an LC port connector of a Mini-GBIC (MGBIC-LC09) in front panel port 50 or 52.

Each fiber-optic link consists of two fiber-optic strands within the cable:

- Transmit (TX)
- Receive (RX)

The transmit strand from a device port connects to the receive port of a fiber-optic Fast Ethernet device at the other end of the segment. The receive strand of the applicable LC port connects to the transmit port of the fiber-optic Fast Ethernet device.

Enterasys Networks recommends labeling fiber-optic cables to indicate receive and transmit ends. Many cables are pre-labeled, providing matching labels or tapes at both ends of each strand of cable.

To connect an LC cable connector to a fixed LC connector of a Mini-GBIC, refer to [Figure 3-13](#) and proceed as follows:

1. Remove the protective covers (not shown) from the front panel LC fiber-optic port (port 52 in this example) and from the connectors on each end of the cable.



NOTE: Leave the protective covers in place when the connectors are not in use to prevent contamination.



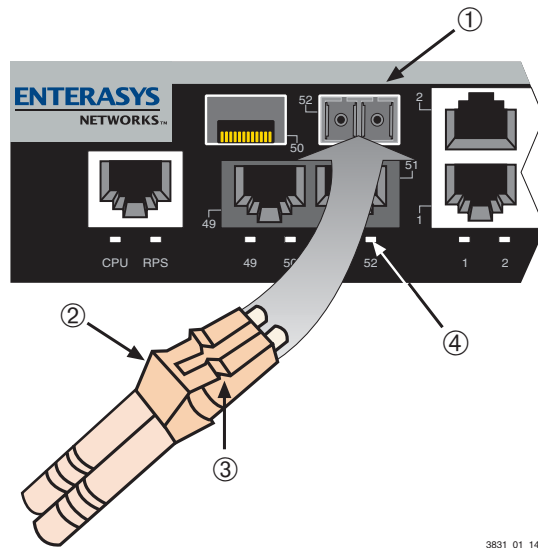
CAUTION: Do not touch the ends of the fiber-optic strands, and do not let the ends come in contact with dust, dirt, or other contaminants. Contamination of cable ends causes problems in data transmissions. If the ends of the fiber-optic strands become contaminated, use a canned duster to blow the surfaces clean. A fiber-port cleaning swab saturated with optical-grade isopropyl alcohol may also be used to clean the ends.

2. Insert the LC cable connector into the LC connector until it clicks into place.



NOTE: To remove the LC cable connector, press on its release tab and pull out the cable connector.

Figure 3-13 Cable Connection to LC Multimode Fiber-Optic Connectors



3831_01_14

Mini-GBIC LC port connector shown on C1H124-48
MT-RJ cable connector

Release tab
Link/Activity LED

3. Plug the other end of the cable into the appropriate port on the other device. Some cables may be terminated at the other end with two separate connectors, one for each fiber-optic strand. In this case, ensure that the transmit fiber-optic strand is connected to the receive port and the receive fiber-optic strand to the transmit port.
4. Verify that a link exists by checking that the port Link/Activity LED is on (blinking green or solid green). If the Link/Activity LED is off, perform the following steps until it is on:
 - a. Verify that the device at the other end of the segment is ON and connected to the segment.
 - b. If there are separate fiber-optic connections on the other device, check the crossover of the cables. Swap the cable connections if necessary.
 - c. Check that the fiber-optic connection meets the dB loss and cable specifications outlined in the Cabling Guide for multimode mode cabling. To obtain this document, refer to [“Related Documents”](#) in **About This Guide**.If a link has not been established, refer to [Chapter 4](#) for LED troubleshooting details. If a problem persists, refer to [Section 1.12](#) for details on contacting Enterasys Networks for support.
5. Repeat steps 1 through 3, above, until all connections have been made.

3.6 CONNECTING TO CONSOLE PORT FOR LOCAL MANAGEMENT

This section describes how to install a UTP straight-through cable with RJ45 connectors and optional adapters to connect a PC, a VT series terminal, or a modem to an Enterasys Networks module to access CLI commands. This section also provides the pinout assignments of the adapters.

3.6.1 What Is Needed

One RJ45-to-DB9 female adapter (supplied with the device).

The following is a list of the user-supplied parts that may be needed depending on the connection:

- UTP straight-through cable with RJ45 connectors
- RJ45-to-DB25 female adapter
- RJ45-to-DB25 male adapter

Using a UTP straight-through cable with RJ45 connectors and RJ45-to-DB9 adapter, you can connect products equipped with an RJ45 Console port to an IBM or compatible PC running a VT series emulation software package.

Using a UTP straight-through cable and an optional RJ45-to-DB25 female adapter, you can connect products equipped with an RJ45 Console port to a VT series terminal or VT type terminals running emulation programs for the VT series.

Using a UTP straight-through cable and an optional RJ45-to-DB25 male adapter, you can connect products equipped with an RJ45 Console port to a Hayes compatible modem that supports 9600 baud.

3.6.2 Connecting to an IBM or Compatible Device

To connect an IBM PC or compatible device, running the VT terminal emulation, to an Enterasys Networks module Console port ([Figure 3-14](#)), proceed as follows:

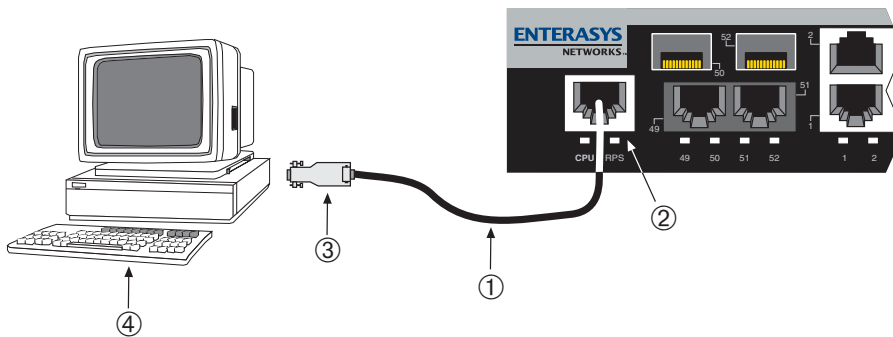
1. Connect the RJ45 connector at one end of the cable (not supplied) to the Console port on the Enterasys Networks device.
2. Plug the RJ45 connector at the other end of the cable into the RJ45-to-DB9 adapter (supplied with the device).
3. Connect the RJ45-to-DB9 adapter to the communications port on the PC .

4. Turn on the PC and configure your VT emulation package with the following parameters:

Parameter	Setting
Mode	7 Bit Control
Transmit	Transmit=9600
Bits Parity	8 Bits, No Parity
Stop Bit	1 Stop Bit

When these parameters are set, the Startup screen will display. Proceed to [Section 3.7](#) to complete the installation.

Figure 3-14 Connecting an IBM PC or Compatible



3831_01_09

UTP straight-through cable with RJ45 connectors
RJ45 Console port shown on C1H124-48

RJ45-to-DB9 PC adapter
PC

3.6.3 Connecting to a VT Series Terminal

To connect a VT Series terminal to an Enterasys Networks device Console port ([Figure 3-15](#)), use a UTP straight-through cable with RJ45 connectors and an **optional** RJ45-to-DB25 female adapter, and proceed as follows:

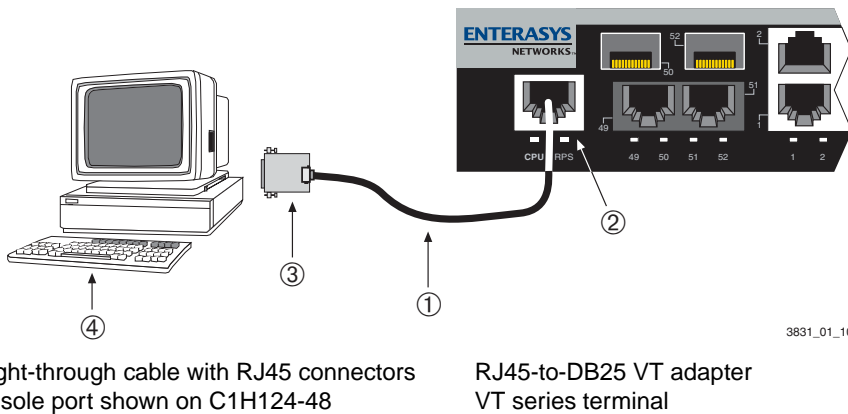
1. Connect the RJ45 connector at one end of the cable to the Console port on the Enterasys Networks device.
2. Plug the RJ45 connector at the other end of the cable into the RJ45-to-DB25 female adapter.
3. Plug the RJ45-to-DB25 adapter to the port labeled COMM on the VT terminal.

- Turn on the terminal and access the Setup Directory. Set the following parameters on your terminal:

Parameter	Setting
Mode	7 Bit Control
Transmit	Transmit=9600
Bits Parity	8 Bits, No Parity
Stop Bit	1 Stop Bit

When these parameters are set, the Startup screen will display. Proceed to [Section 3.7](#) to complete the installation.

Figure 3-15 Connecting a VT Series Terminal



3.6.4 Connecting to a Modem

To connect a modem to an Enterasys Networks device modem port ([Figure 3-16](#)), use a UTP straight-through cable with RJ45 connectors and an **optional** RJ45-to-DB25 male adapter, and proceed as follows:

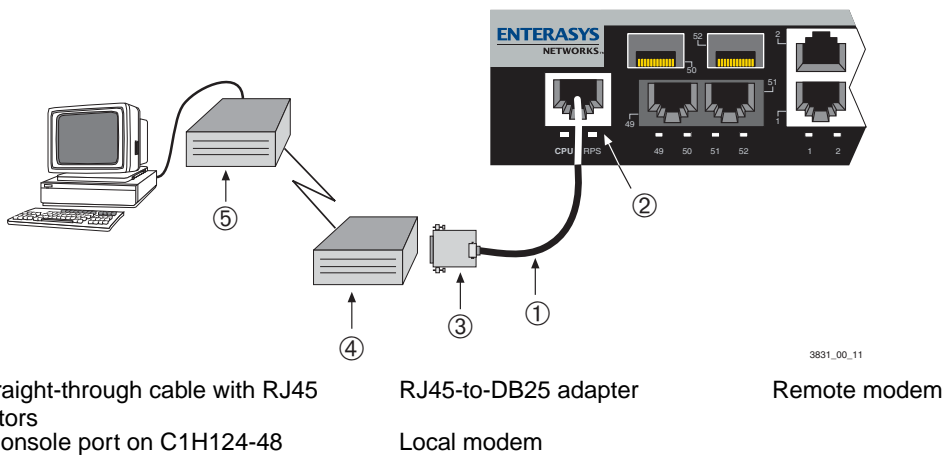
- Connect the RJ45 connector at one end of the cable to the Console port on the Enterasys Networks device.
- Plug the RJ45 connector at the other end of the cable into the RJ45-to-DB25 male adapter.
- Connect the RJ45-to-DB25 adapter to the communications port on the modem.
- Turn on the modem and make sure the remote modem is ON.

5. Configure your VT emulation package with the following parameters:

Parameter	Setting
Mode	7 Bit Control
Transmit	Transmit=9600
Bits Parity	8 Bits, No Parity
Stop Bit	1 Stop Bit

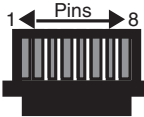
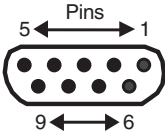
When these parameters are set, the Startup screen will display. Proceed to [Section 3.7](#) to complete the installation.

Figure 3-16 Connecting to a Modem

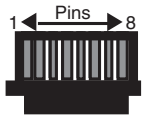
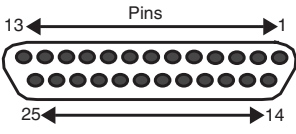


3.6.5 Adapter Wiring and Signal Assignments

Console Port Adapter Wiring and Signal Diagram			
RJ45		DB9	
Pin	Conductor	Pin	Signal
1	Blue	2	Receive (RX)
4	Red	3	Transmit (TX)
5	Green	5	Ground (GRD)
2	Orange	7	Request to Send (RTS)
6	Yellow	8	Clear to Send (CTS)

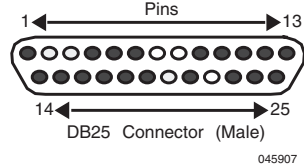
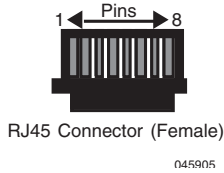
 <p>RJ45 Connector (Female) 045905</p>	 <p>DB9 Connector (Female) 045904</p>
---	--

VT Series Port Adapter Wiring and Signal Diagram			
RJ45		DB25	
Pin	Conductor	Pin	Signal
4	Red	2	Transmit (TX)
1	Blue	3	Receive (RX)
6	Yellow	5	Clear to Send (CTS)
5	Green	7	Ground (GRD)
2	Orange	20	Data Terminal Ready

 <p>RJ45 Connector (Female) 045905</p>	 <p>DB25 Connector (Female) 045906</p>
---	--

Modem Port Adapter Wiring and Signal Diagram

RJ45		DB25	
Pin	Conductor	Pin	Signal
1	Blue	2	Transmit (TX)
2	Orange	8	Data Carrier Detect (DCD)
4	Red	3	Receive
5	Green	7	Ground (GRD)
6	Yellow	20	Data Terminal Ready (DTR)
8	Gray	22	Ring Indicator



3.7 COMPLETING THE INSTALLATION

After installing the Enterasys Networks device and making the connections to the network, proceed as follows:

Initial Logon to Device Management

To initially access device management from your local pc, terminal, or modem connection, proceed as follows at the displayed startup screen:

- Enter **rw** (Read-Write) for Username.
- At the Password prompt, press **ENTER** (RETURN).

For details on how to configure the C1H124-48 and C1G124-24 using the command line interface, refer to the *Matrix C Series Configuration Guide*. The CLI commands enable you to initially set up and perform more involved management configurations on the C1H124-48 and C1G124-24.

After the initial configuration, you can also use WebView (Enterasys Networks' embedded web server) for configuration and management tasks.

The guides are available online at:

<http://www.enterasys.com/support/manuals>

Once you are confident that the installation is successful, route and secure your cables. If you require assistance, contact Enterasys Networks using one of the methods described in [Section 1.12](#).

Troubleshooting

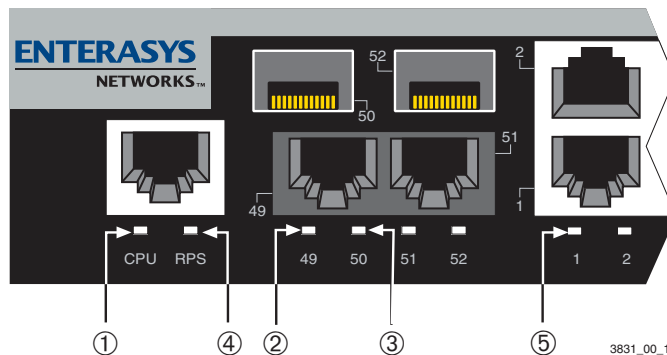
This chapter provides information concerning the following:

- Using LANVIEW (Section 4.1)
- Troubleshooting checklist (Section 4.2)
- Using the Reset button (Section 4.3)

4.1 USING LANVIEW

The C1H124-48 (shown in Figure 4-1) and the C1G124-24 use the Enterasys Networks built-in visual diagnostic and status monitoring system called LANVIEW. The LANVIEW LEDs allow you to quickly observe network status for diagnosing network problems.

Figure 4-1 LANVIEW LEDs



CPU LED

Link/Activity LED for 1-Gbps port 49

Link/Activity LED for 1-Gbps Mini-GBIC port 50

RPS LED for redundant power source status

Link/Activity LED for 10/100 Mbps RJ45 port 1

Table 4-1 describes the LED indications and provides recommended actions as appropriate.



NOTE: The terms **flashing**, **blinking**, and **solid** used in [Table 4-1](#) indicate the following:

Flashing: LED is flashing randomly.

Blinking: LED is flashing at a steady rate (approximately 50% on, 50% off).

Solid: LED is on steady and not pulsing.

Table 4-1 LANVIEW LEDs

LED	Color	State	Recommended Action
CPU	Red	Solid. System is not fully functional, or the system is experiencing a fatal error.	If the LED remains red for several minutes, the system may have a fatal error. Contact Enterasys Networks for technical support.
	Amber	Solid. Power-up testing in progress.	If the LED remains amber for more than several minutes, contact Enterasys Networks for technical support.
	Green	Solid. System is fully functional.	None.
		Blinking. System is booting up.	None.
Amber	Blinking. Image is being loaded into Flash memory.	None.	

Table 4-1 LANVIEW LEDs (Continued)

LED	Color	State	Recommended Action
RPS	Off	No power indicated by either the internal or a connected external power supply, or there is no power redundancy available from the external power supply.	<ol style="list-style-type: none"> 1. Ensure that the power cords are plugged in correctly and that there is power at the two power sources. 2. If an external power supply is connected to the C1H124-48, note the display of its LED indicators for power status indications. Correct problem as necessary. 3. Contact Enterasys Networks for technical support.
	Green	Blinking. No power redundancy from the external power supply, or the internal power supply failed or is not receiving ac power. However, there is power redundancy from the external power supply.	<ol style="list-style-type: none"> 1. Ensure that the power cords are plugged in correctly and that there is power at the two power sources. 2. Contact Enterasys Networks for technical support.
		Solid. Power redundancy is available from external power supply. The system is powered by either the internal or external power supply.	None.
Link/ Activity	Off	No link. No activity or port in standby.	None.
	Green	Solid. Port is linked, but the interface is not receiving any traffic.	None.
		Blinking. Port linked and traffic is being received or transmitted by the interface.	None.

4.2 TROUBLESHOOTING CHECKLIST

If the device is not working properly, refer to [Table 4-2](#) for a checklist of problems, possible causes, and recommended actions to resolve the problem.

Table 4-2 Troubleshooting Checklist

Problem	Possible Cause	Recommended Action
All LEDs are OFF.	Loss of power.	Ensure that the device was installed properly according to the installation instructions in Chapter 3 , and that the device chassis is powered properly.
No local management startup screen.	Incorrect terminal setup.	Refer to the <i>Matrix C Series Configuration Guide</i> for proper setup procedures.
	Improper console cable pinouts.	Refer to Appendix A for proper Console port pinouts.
	Corrupt firmware image, or hardware fault.	If possible, attempt to download the image to the device again. Refer to <i>Matrix C Series Configuration Guide</i> for instructions to clear NVRAM.
Cannot navigate beyond startup screen.	Improper Community Names Table.	Refer to the <i>Matrix C Series Configuration Guide</i> for the Community Names Table setup.
		If the Community Names have been forgotten, refer to <i>Matrix C Series Configuration Guide</i> for instructions on how to set the mode switch to reset the Community Names to their default values.

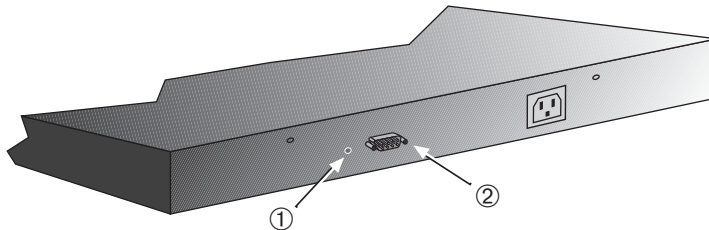
Table 4-2 Troubleshooting Checklist (Continued)

Problem	Possible Cause	Recommended Action
<p>Cannot contact the device through in-band management.</p>	<p>IP address not assigned.</p>	<p>Refer to the <i>Matrix C Series Configuration Guide</i> for the IP address assignment procedure.</p>
	<p>Port is disabled.</p>	<p>Enable port. Refer to the <i>Matrix C Series Configuration Guide</i> for instructions to enable/disable ports.</p>
	<p>No link to device.</p>	<p>Verify that all network connections between the network management station and the device are valid and operating.</p> <p>If the problem continues, contact Enterasys Networks for technical support.</p>
<p>Port(s) goes into standby for no apparent reason.</p>	<p>Loop condition detected.</p>	<p>Verify that Spanning Tree is enabled. Refer to <i>Matrix C Series Configuration Guide</i> for the instructions to set the type of STA.</p> <p>Review the network design and delete unnecessary loops.</p> <p>If the problem continues, contact Enterasys Networks for technical support.</p>
<p>User parameters (IP address, device and module name, etc.) were lost when the device power was cycled or the rear panel Reset button was pressed.</p>	<p>Clear NVRAM was set using CLI commands.</p>	<p>Reenter the lost parameters as necessary. Refer to <i>Matrix C Series Configuration Guide</i> for the instructions to configure the device using CLI commands.</p> <p>If the problem continues, contact Enterasys Networks for technical support.</p>

4.3 USING THE RESET BUTTON

If you forget the password to the device management entity, you can use the Reset button shown in Figure 4-1 to reset the device management password.

Figure 4-2 Reset Button



3831_01_13

Reset button

D-type 15-pin connector for optional redundant power system

To reset the device password, proceed as follows:

1. Make sure that the CPU LED is solid green, indicating that the device is fully functional.
2. Then press-and-hold the Reset button for a minimum of 5 seconds. This resets the password to its default setting.
3. Logon to device management. You can now logon to the device via the Console port and assign a new password using the command line interface (CLI). To access device management from your local pc, terminal, or modem connection, proceed as follows:
 - a. Enter **rw** (Read-Write) for Username.
 - b. At the Password prompt, press ENTER (RETURN).

For details on how to enter a new password using the command line interface, refer to the *Matrix C Series Configuration Guide*. The CLI commands enable you to initially set up and perform more involved switch management configurations.

The guide is available online at:

<http://www.enterasys.com/support/manuals>

If you require assistance, contact Enterasys Networks using one of the methods described in Section 1.12.

Specifications

This appendix provides information about the following:

- C1G124-24 and C1H124-48 specifications ([Section A.1](#))
- Optional Mini-GBIC input/output port specifications ([Section A.2](#))
- Gigabit Ethernet ([Section A.3](#))
- Console Port pinout assignment ([Section A.4](#))
- Regulatory compliance ([Section A.5](#))

Enterasys Networks reserves the right to change the specifications at any time without notice.

A.1 C1G124-24 AND C1H124-48 SPECIFICATIONS

Table A-1 provides the I/O ports, processors and memory, physical, and environmental specifications for the C1G124-24 and C1H124-48.

Table A-1 Device Specifications

Item	Specification
C1G124-24 I/O Ports	
Ports 1 through 24 (21 through 24 are either/or shared with Mini-GBIC ports slots 21 through 24)	Fast Ethernet 10/100/1000 Mbps (10BASE-T/100BASE-TX/1000BASE-T compliant), RJ45 front panel connectors.
Ports 21 and 24 (Mini-GBIC option slots) are either/or shared with RJ45 ports 21 through 24	Mini-Gigabit Ethernet 1000 Mbps, supports optional fiber-optic Mini-GBIC interfaces (1000BASE-SX or 1000BASE-LX compliant) with LC or MT-RJ connections, depending on the optional interface. Refer to Section A.2 for a description of the supported modules.
C1H124-48 I/O Ports	
Ports 1 through 48	Fast Ethernet 10/100 Mbps (10BASE-T/100BASE-TX compliant), RJ45 front panel connectors.
Ports 49 and 51	Gigabit Ethernet 1000 Mbps (1000BASE-T compliant), RJ45 connectors.
Ports 50 and 52 (Mini-GBIC option slots)	Mini-Gigabit Ethernet 1000 Mbps, supports optional fiber-optic Mini-GBIC interfaces (1000BASE-SX or 1000BASE-LX compliant) with LC or MT-RJ connections, depending on the optional interface. Refer to Section A.2 for a description of the supported modules.

Table A-1 Device Specifications (Continued)

Item	Specification
Redundant Power Source Connector	
External Power Connector on rear of the C1G124-24 and C1H124-48	15-pin D-type connector for an optional dc Power/Monitor cable connection from an external redundant power supply module (CSER-RPS-PSM).
Physical	
Dimensions	8.9H x 44.45W x 44.0D (cm) 3.5H x 17.5W x 17.3D (in.)
Shipping Weight (one device per carton)	5.5 kg (12.1 lb)
Net weight	5.0 kg (11.0 lb)
MTBF (calculated):	
C1H124-48	106,648 hours
C1G124-24	101,000 hours
Environmental	
Operating Temperature	5°C to 40°C (41°F to 104°F)
Storage Temperature	-30°C to 73°C (-22°F to 164°F)
Operating Relative Humidity	5% to 90% (non-condensing)

A.2 MINI-GBIC INPUT/OUTPUT SPECIFICATIONS

The Mini-Gigabit Ethernet Card (Mini-GBIC) port expansion slots can accept 1000BASE-SX short wavelength or 1000BASE-LX long wavelength fiber-optic Mini-GBICs (refer to [Table A-2](#)). The optional Mini-GBICs are hot swappable.



WARNING: Mini-GBICs use Class 1 lasers. Do not use optical instruments to view the laser output. The use of optical instruments to view laser output increases eye hazard. When viewing the output optical port, power must be removed from the network adapter.

Table A-2 Mini-GBIC Input/Output Port Specifications

Item	Specification
MGBIC-LC01	Provides one LC fiber-optic multimode port that is compliant with the 1000BASE-SX standard LC connector.
MGBIC-LC09	Provides one LC fiber-optic single-mode port that is compliant with the 1000BASE-LX standard LC connector.
MGBIC-MT01	Provides one MT-RJ fiber-optic multimode port that is compliant with the 1000BASE-SX standard MT-RJ connector.

A.3 GIGABIT ETHERNET SPECIFICATIONS

The following specifications for the Mini-GBICs (shown in [Table A-2](#) through [Table A-6](#)) meet or exceed the IEEE 802.3z-1998 standard.

A.3.1 MGBIC-LC01 / MGBIC-MT01 Specifications (1000BASE-SX)

Table A-3 MGBIC-LC01 / MGBIC-MT01 Optical Specifications

Item	62.5 μ m MMF	50 μ m MMF
Transmit Power (minimum)	-9.5 dBm	-9.5 dBm
Receive Sensitivity	-17 dBm	-17 dBm
Link Power Budget	7.5 dBm	7.5 dBm

Table A-4 MGBIC-LC01 / MGBIC-MT01 Operating Range

Item	Modal Bandwidth @ 850 nm	Range
62.5 μ m MMF	160 MHz/km	2-220 Meters
62.5 μ m MMF	200 MHz/km	2-275 Meters
50 μ m MMF	400 MHz/km	2-500 Meters
50 μ m MMF	500 MHz/km	2-550 Meters

A.3.2 MGBIC-LC09 Specifications (1000BASE-LX)

Table A-5 MGBIC-LC09 Optical Specifications

Item	62.5 μm MMF	50 μm MMF	10 μm MMF
Transmit Power (minimum)	-11.5 dBm	-11.5 dBm	-9.5 dBm
Receive Sensitivity	-20 dBm	-20 dBm	-20 dBm
Link Power Budget	8.5 dBm	8.5 dBm	10.5 dBm

Table A-6 MGBIC-LC09 Operating Range

Item	Modal Bandwidth @ 1300 nm	Range
62.5 μ m MMF	500 MHz/km	2-550 Meters
50 μ m MMF	400 MHz/km	2-550 Meters
50 μ m MMF	500 MHz/km	2-550 Meters
10 μ m SMF	N/A	2-10,000 Meters

A.4 CONSOLE PORT PINOUT ASSIGNMENTS

The Console port is a serial communications port that supports local management of the C1H124-48 and C1G124-24. These pin assignments differ from other Enterasys products. Refer to [Table A-7](#) for the Console port pin assignments.

Table A-7 Console Port Pin Assignments

Pin	Signal Name	Input/Output
1	Transmit Data (TD)	Output
2	Clear to Send (CTS)	Input
3	Data Set Ready (DSR)	Input
4	Receive Data (RD)	Input
5	Signal Ground (GND)	NA
6	Request to Send (RTS)	Output
7	Data Terminal Ready (DTR)	Output
8	Data Carrier Detect (DCD)	Input

A.5 REGULATORY COMPLIANCE

The C1H124-48 and C1G124-24 meet the safety and electromagnetic compatibility (EMC) standards listed in [Table A-8](#):

Table A-8 Compliance Standards

Compliance Standards	
Safety	UL 60950, CSA C22.2 No. 60950, EN 60950, 73/23/EEC and IEC 60950. The 7G-6MGBIC also meets the EN 60825, 21 CFR 1040.10 standards.
Electromagnetic Compatibility (EMC)	FCC Part 15, CSA C108.8, 89/336/EEC, EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024, AS/NZS 3548, VCCI V-3